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Forty blind children (ages 6 to 14, IQ's 65 to 132) in residential schools were studied to discover the relationship of verbalism to age, intelligence, experience, and personal adjustment. The children were given 40 selected words to obtain definitions, experience claims, and visually oriented verbalism scores. They then tried to identify items representing these words. The Tuddenham Reputation Test was used for adjustment scores. Significant negative correlations were obtained between chronological age and verablism, between IQ and verbalism, and between experience and verbalism. There were no significant negative correlations between personal adjustment and verbalism nor between chronological age, IQ, experience, or personal adjustment with visually oriented verbalism. Results suggested that interaction with the environment will reduce verbalism in blind children. (LE)

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VERBALISM AMONG BLIND CHILDREN

An Investigation and Analysis

By

Randall K. Harley, Jr., Ph.D.

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AMERICAN FOUNDATION *for the Blind*

VERBALISM AMONG BLIND CHILDREN

AN INVESTIGATION AND ANALYSIS

By
Randall K. Harley, Jr., Ph.D.

No. 10
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Foreword

Among the major concerns of educators of blind children is the tendency of these children to verbalize about reality without appropriate foundation in concrete experience. However, too little attention so far has been given to this area in the literature on the education of the blind.

This monograph is based on a doctoral dissertation entitled *An Investigation and Analysis of Verbalism Among Blind Children* which was submitted to the Department of Special Education of George Peabody College for Teachers. The primary purpose of the study was to explore the relationship of verbalism among blind children to age, intelligence, experience and personal adjustment.

The American Foundation for the Blind takes pleasure in making available to students and workers in the field this much needed and thoughtful contribution to our professional literature.

Sincere appreciation is due to the author for the opportunity given us to publish his work.

M. Robert Barnett
EXECUTIVE DIRECTOR

Acknowledgments

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Finally, to his wife, Jayne, the writer expresses his thanks for her stimulating moral support and for her diligent and conscientious assistance in administering tests, scoring responses, and preparing this report.

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Introduction

Verbal learning without appropriate foundation in concrete experience has been frequently mentioned in the literature as one of the major problems in the education of the blind. Concern has been expressed that excessive dependence on verbal learning may have negative effects upon both academic learning and personality development. As the blind child becomes schooled in verbalisms (words and concepts to which he can attach insufficient experiential relations) he may often accept verbal descriptions of others instead of gaining the necessary impressions from concrete experiences through his senses. He may be able to verbalize quite readily about objects and tangible materials that he could not tactually, or otherwise, identify if given the opportunity. Subsequently, abstraction is built upon abstraction, resulting in hazy and inaccurate understandings of his environmental surroundings. In addition, he may accept visually oriented descriptions in lieu of impressions from his own senses. The acceptance of borrowed descriptions may cause him to lose faith in the worth of his own real experiences and to feel devalued. The resulting depression may be generalized to other areas of adjustment.

Cutsforth (1951, p. 247) commented, "It is quite evident that verbal learning is subverting the educational aims throughout the entire school course of the blind." He pointed out that this problem was receiving little attention in the literature on the education of the blind.

French (1932, p. 185) mentioned, "Teachers of the blind have too often forgotten that the 'word' is never an adequate symbol for the entity, phenomenon, process or idea that it symbolizes." He added that often the word is accepted as reality in school.

Chevigny and Braverman (1950) indicated that blind children often accept visual concepts from teachers as more important than evidence from their own senses.

Lowenfeld (1956) emphasized the need for "concreteness" in

teaching. He said that concreteness will help the blind child to avoid falling into a pattern of unreality and verbalism that may interfere with his later adjustment to the requirements of living.

Verbalism is especially a problem in the education of blind children since they are limited to the use of senses other than vision. They depend extensively upon tactual observations for concrete experiences. These experiences are very limited due to the necessity for direct contact with the object under consideration. The use of the other senses in perception of objects in the environment is even more limited than touch. The blind are not only handicapped in having one less sense than seeing children, but they are restricted in mobility. This reduces even further the range, variety, and frequency of experiences, and may be a very serious handicap unless concrete experiences are specifically provided in the curriculum.

Although verbalism has been identified as a problem, little research has been undertaken concerning factors related to verbalism among blind children. More information concerning variables which may have an influence upon the degree of verbalism in blind children is needed.

Concept formation is an area very closely related to verbalism. Verbalism occurs when words are used that represent hazy or incorrect concepts. These inaccurate and vague concepts may be the result of insufficient sensory experience of the child with his environment. Although research on verbalism among blind children has been very limited, research on concept formation among seeing children has been more extensive.

The review of research indicated that certain variables were related to concept formation among sighted children. Research indicated that age, intelligence, and experience are prominent factors related in varying degrees to concept formation. Research also indicated a relationship between personal adjustment and perception of the environment.

The relation of age, intelligence, experience, and personal adjustment to verbalism was considered in the design of the present experiment. In the development of the hypotheses, the concern for visually oriented verbalism was separated from attention to other verbalisms. Children may not only define words correctly without

being able to identify the objects which the words represent, but they may also use visually oriented words in their definitions.

Purpose of Study

The purpose of this study was to explore the relationship of verbalism among blind children to age, intelligence, experience, and personal adjustment.

Definitions of Terms

For the purpose of this study certain terms were defined in the following ways:

1. *Verbalism:* Verbalism existed when a child gave an acceptable definition of a word, but could not accurately identify the object symbolized by the word by some sensory means.
2. *Blind:* Blind referred to having limitations from birth of central visual acuity ranging from light perception to total blindness as reported from the latest available ophthalmological examination.
3. *Visually oriented verbalism:* Visually oriented verbalism existed when a child employed a word or words referring to color or brightness in defining the name of a given object.

Hypotheses Tested

I. It was hypothesized that CA is negatively correlated with verbalism.

II. It was hypothesized that CA is negatively correlated with visually oriented verbalism.

III. It was hypothesized that IQ is negatively correlated with verbalism.

IV. It was hypothesized that IQ is negatively correlated with visually oriented verbalism.

V. It was hypothesized that experience is negatively correlated with verbalism.

VI. It was hypothesized that experience is negatively correlated with visually oriented verbalism.

VII. It was hypothesized that personal adjustment is negatively correlated with verbalism.

VIII. It was hypothesized that personal adjustment is negatively correlated with visually oriented verbalism.

Derivation of hypotheses I and II. Piaget (1929) and others reported in their experiments that concepts in children change with increasing age. If verbalism occurs as a result of faulty and hazy concepts, verbalism may also be related to age. Since relatively commonplace words were used in this study, older children should have had more opportunity for experience with the objects symbolized by the test words than younger children. Verbalism for these words should decrease as the children increase in age. The older children should have less need for visually oriented words in their speech. They have had more time to assimilate their own background of experience with these objects making it unnecessary to call upon borrowed visually oriented descriptions in their definitions. Visually oriented verbalism should decrease as age increases.

Derivation of hypotheses III and IV. Oakes (1947) reported that children's concepts vary with intelligence. Since verbalism may be caused by inaccurate and vague concepts resulting from insufficient sensory experience, verbalism may also vary with intelligence. The more intelligent children should be better able to draw inferences, and to make identifications of parts of their environment, with which they have had little or no experience, because of their superiority in verbal knowledge. They should, likewise, be more likely to employ fewer visually oriented words since they have a larger fund of knowledge concerning these objects, making it unnecessary to use visually oriented expression.

Derivation of hypotheses V and VI. Hall (1907) and Oakes (1947) found that experience is a factor in the conceptual development of children. If verbalism is caused by inaccurate and vague concepts, verbalism would be expected to show a relationship to concept development. If inaccurate and vague concepts are the result of insufficient sensory experience, experience would be expected to be related to verbalism. In this study, the children with the most experience with the items in the scale would be expected to show the least amount of verbalism concerning these items. In

addition, children having more experience with these objects should have less need for borrowing visually oriented descriptions from the experience of sighted associates.

Derivation of hypotheses VII and VIII. In the studies of Chordorkoff (1954) and Seeman (1958), it was conjectured that a low level of adjustment is characterized by lack of interest and limited awareness of environment; whereas a high level of adjustment is characterized by keen interest and awareness of environment. Thus, the more inaccurate the individual's perception of his environment, the more inadequate would be his personal adjustment. Since by definition verbalism is affected by the accuracy of identification by sensory means, it was expected that the degree of verbalism would be influenced by the level of personal adjustment. Furthermore, poorly adjusted children would be more likely to have lost faith in their own personal experiences, and to have accepted visual descriptions of their peers. They would be expected to use more visually oriented verbalism in their communication.

Method

The method used in this experiment has been categorized into two sections: (1) Selection of the subjects, and (2) materials and procedure.

Selection of Subjects

The subject sample consisted of 40 blind children, of both sexes, randomly drawn from ages of six years, eleven months to fourteen years, three months from eight cottages of two residential schools. The schools were Perkins School for the Blind in Watertown, Massachusetts, and The State School for the Blind and Deaf in Raleigh, North Carolina. Twenty *Ss* were chosen from each school. All of the *Ss* were blind from birth, having no greater remaining vision than light perception.

Although special attention was not given the etiology of the visual handicap in the selection, 30 (75 per cent) of the *Ss* were blind due to retrolental fibroplasia, a condition resulting from improper control of oxygen following premature birth. The blindness of the other ten *Ss* resulted from miscellaneous congenital abnormalities.

The *Ss* were drawn from grades one through eight, with 39 *Ss* having lived a majority of their school years in residential school settings. The mean CA was 136 months, and the standard deviation of CA was 18.50 months. Their IQ's ranged from 65 to 132, with a mean of 100.12, and a standard deviation of 16.07. These scores were all obtained from individual intelligence tests given by qualified psychometrists of the two schools within the previous two years at the Perkins school, and the previous three years at the North Carolina school. Twenty-four scores were obtained from the Interim Hayes-Binet (1950), and 16 scores were derived from the Weschler Intelligence Scale for Children (1949). There were 15 male and 25 female *Ss*. Twenty-seven *Ss* were from homes in urban settings, and 13 *Ss* came from rural backgrounds.

Materials and Procedure

Each *S* was seen individually, and the experimental procedure consisted of three phases, in the following order:

1. The administration of the selected words to obtain definitions, experience claims, and visually oriented verbalism scores.
2. The identification of the items representing these words to determine verbalism scores.
3. The administration of the Tuddenham Reputation Test (1952) to secure adjustment scores. This scale was administered to 20 children in each of eight cottages, individually for the younger children, and in groups for some of the older children.

Definition of Words

The selected words were obtained primarily from a list used in a pilot study conducted previously with Negro children at the North Carolina School for the Blind and Deaf. This list had been constructed from the Gates (1935) list, *A Reading Vocabulary for the Primary Grades.* The revised list of words was evaluated by a committee of three teachers to obtain words that were nonvisually oriented. "Goldfish" is an example of a word that was dropped from the list because of its visual connotation.

Seventy-six words were used in order to obtain a desired list of 40 words which 40 *S*s could define acceptably. One hundred twenty-one *S*s were screened until 40 *S*s could satisfactorily define 39 of the words in common. It had been planned to have 40 *S*s who could define 40 words, but in the checking of the scoring it was discovered that one of the 40 *S*s had missed one of the 40 words.

In the pilot study, children were not required to define all of the words in the scale. In this manner, a child defining 100 words could obtain the same verbalism (VE) or visually oriented verbalism score (VV) as a child defining only ten words. However, the degree of VE or VV by the former would be much less than that of the latter. The resulting correlations were not comparable to the correlations obtained in this study.

Ample opportunity was given for rapport to develop. (No set pattern of deliberate steps was taken since all examiners were

known by the children before the examination was started.) Each child was instructed as follows:

"I want to see what you can tell me about some words. Listen carefully and tell me what you know about each word." If there were no questions, *E* then proceeded with the first word. "*Apron* —have you ever felt an apron?" "What is an apron?" If no answer was given, *E* asked, "Can you say something about apron?" If there was still no answer, *E* asked, "Do you want to make a guess?" If the answer was a description of an apron, but not the kind of apron represented in the test, *E* said, "What else does apron mean?" If *E* felt that the response was vague, neutral questioning was used such as, "Please explain a little more," or, "Can you tell me more?" or simply by repeating the question.

In scoring the definitions, any recognized meaning of the word was acceptable, if applicable to the item being used to represent the word. Richness and exactness of language were disregarded. If the definition was applicable, though vague, the response was credited. The following positive types of responses were credited:

1. A synonym
2. A use
3. One or more attributes which were correct
4. General classification to which the word belonged
5. An example using the word itself correctly
6. One or more correct descriptve features.

Two teachers assisted in scoring the definitions. Definitions of words were accepted if they were approved by both teachers according to the specified criteria.

Identification of the Items

The identification of the items representing the 39 words was administered to the 40 *S*s, who had defined the words satisfactorily. After the items had been placed on tables, each *S* was given an opportunity to identify each item. A maximum time limit of 15 seconds per item was set in order to give each *S* equal time to identify the items.

The following instructions were given by *E* to *S*:

I am going to show you some objects. Some of these objects are models,

toys, or stuffed animals. The others are just as you would find them about you every-day. You are to examine each one of them carefully. Just as soon as you know what it is or what it represents, say the name of the object. Do you understand?

The *E* then proceeded to give the *S* the first item and said, "What does this represent?" or "What is this?" If the *S* gave a vague answer, *E* asked, "Can you tell me anything more about it?"

The child's response was recorded verbatim. Exactness was required for identification. Correct classification of the item was not credited. For example, a "lemon" may have been identified as a "fruit," or a strip of "velvet" as "cloth." However, credit was received only upon identification of the item according to the word used in the original definition section of the scale. This practice was followed in order to simplify scoring procedures.

A test-retest reliability was found for the identification section of the verbalism scale. Nineteen *Ss* at the North Carolina school were retested after seven months. A reliability coefficient of .87 was found using the machine method of computation outlined by Walker and Lev (1953).

Tuddenham Reputation Test

The Tuddenham Reputation Test (1952) was administered to 160 children or 20 from each of the eight cottages housing the original 40 *Ss* used in the verbalism study. Several *Ss*, who were day students, were seldom mentioned by the children living on the campus. This test was given individually to 137 children, and in groups to 23 of the older children.

The administration of this test included the following instructions:

I want to see how good you are at guessing the names of children in your cottages. I'll tell you just what these children do, and you tell me who I'm talking about. It may be one person or two or three. Sometimes it might even be you. (Tuddenham, 1952, p. 6)

After the instructions were given to the *S*, the *E* then proceeded with the first question, "Which children wiggle a lot and can't sit still?"

All of the first 24 reputation questions were paired so that each child was permitted to name one to three classmates who excelled, and one to three who were weak in that trait. The last question asking for the best friend was not paired with a negative question. The names mentioned under desirable traits were given a "plus" (+) score for each mention, while the names mentioned under undesirable traits were given a "minus" (—) score for each mention. The algebraic sum of the mentions for each of the randomly selected 20 *Ss* was the score indicating the "adjustment" variable. A high plus score indicated favorable adjustment, and a high minus score indicated unfavorable adjustment.

Results

The data to be analyzed consisted of "scores" on six continuous variables: Chronological ages (CA), intelligence (IQ), experience (EX), adjustment (AD), verbalism (VE), and visually oriented verbalism (VV). These data are hereafter referred to by their abbreviations. The descriptive data for these six variables are shown in Table 1.

TABLE 1
Ranges, Means, and Standard Deviations of Verbalism, Developmental, and Behavioral Measures
($N = 40$)

Variable	*Range*	*Mean*	*SD*
CA (months)	83–171	136.10	18.50
IQ (quotient)	65–132	100.12	16.07
EX (raw scores)	21– 39	30.22	4.95
AD (raw scores)	8– 86	53.03	16.41
VE (raw scores)	8– 32	21.40	6.62
VV (raw scores)	0– 7	2.19	1.70

The descriptive data for CA and IQ have been previously discussed under "Selection of Subjects." The raw scores for EX ranged from 21 to 39 for 39 objects with a mean of 30.22, and a standard deviation of 4.95. EX was based on claims by the *S*s that they had had an occasion for direct contact with the objects in the scale. The raw scores for AD varied from 8 to 86 with a mean of 53.03, and a standard deviation of 16.41. These scores were obtained by taking the algebraic sum of "plus" and "minus" scores and adding a constant of "50" for ease in computation. VE scores were obtained by subtracting the number of identifications made by each *S* from 39 (the number of objects in the scale). The VE scores ranged from 8 to 34 out of a possible 39 with a mean of 21.40, and a standard deviation of 6.62. VV raw scores were determined by the number of items in which the *S* used visually

oriented expressions such as colors. The variability of raw scores for VV was relatively low with a range of 0 to 7, a mean of 2.19, and a standard deviation of 1.70.

Relationships between scores on the first five variables (CA, IQ, EX, AD, and VE) were obtained by use of the correlation ratio. The correlation ratio is a measure of relationship which is useful when both variables are continuous but the regression is not linear (Walker and Lev, 1953).

The values of the squared correlation ratios are indicated in the matrix of Table 2.

TABLE 2
Correlation Ratios between Verbalism, Developmental, and Behavioral Measures
($N = 40$)

Variable	*CA*	*IQ*	*EX*	*AD*	*VE*
CA		.015	.154	.199	.202
IQ			.213	.502*	.513*
EX				.229	.514*
AD					.255
VE					

* Significant at .05 level.

Reference to Table 2 indicates that: (a) The variable IQ correlates significantly with the variable VE; (b) The variable EX correlates significantly with the variable VE; (c) The variable AD correlates significantly with the variable IQ; (d) All other correlations are nonsignificant. The .05 level of confidence was used as a measure of significance in each instance.

F tests were used to test for linearity of relationships (Guilford, 1956). The results of those tests are indicated in Table 3.

Reference to Table 3 indicates that: (a) The relationship of IQ to AD is nonlinear, and (b) All other relationships may be assumed to be linear.

Correlations between these five variables (CA, IQ, EX, AD, and VE) were found by use of the Pearson-Product Moment Method (Walker and Lev, 1953). The intercorrelations are shown in the matrix in Table 4.

TABLE 3
Results of *F* Tests to Determine Linearity of Intercorrelations of Verbalism, Developmental, and Behavioral Measures
($N = 40$)

Variable	*CA*	*IQ*	*EX*	*AD*	*VE*
CA		.556	.759	.506	.437
IQ			.886	3.200*	1.217
EX				1.111	1.574
AD					1.128
VE					

* Significant at .05 level.

A more sensitive analysis was performed making use of partial correlations. The correlations were determined by use of the Wren method (1938), a systematic method for calculating partial and multiple coefficients of regression and correlation which was de-

TABLE 4
Intercorrelations of Verbalism, Developmental, and Behavioral Measures
($N = 40$)

Variable	*CA*	*IQ*	*EX*	*AD*	*VE*
CA		−.017	.266	−.285	−.330*
IQ			.205	.385*	−.596*
EX				.038	−.557*
AD					−.177
VE					

* Significant at .05 level.

veloped as an application of a simplified technique for solving systems of linear equations. Although there is some similarity to the Doolittle method (Walker & Lev, 1953), it is a simpler and more direct method. In this method the correlation of one variable with another variable may be examined while partialling out the effects of the other variables.

The results are indicated in the matrix in Table 5.

TABLE 5
Partial Correlations between Verbalism, Developmental, and Behavioral Measures
($N = 40$)

Variable	*CA*	*IQ*	*EX*	*AD*	*VE*
CA		−.161	.055	.301	−.338*
IQ			−.165	.278	−.588*
EX				.009	−.501*
AD					−.052
VE					

* Significant at .05 level.

Significant results were revealed in three instances: (a) VE correlated negatively and significantly with CA; (b) VE correlated negatively and significantly with IQ; and (c) VE correlated negatively and significantly with AD. On the basis of these data, hypotheses I, II, and V were accepted. Since there was no significant correlation between VE and AD, hypothesis VII was rejected.

It was also the purpose of this investigation to study the variable VV. The values and relationships of this variable to four others are shown in Table 6. The correlation ratio was used again (Walker & Lev, 1953).

TABLE 6
Correlation Ratios of Developmental, and Behavioral Measures with Visually Oriented Verbalism
($N = 40$)

Variable	*CA*	*IQ*	*EX*	*AD*
CC	.072	.067	.042	.049

Reference to Table 6 indicates no significant relationship between VV and the other variables. Since significant results were not indicated, further analysis seemed unwarranted, and hypotheses II, IV, VI, and VIII were rejected.

Discussion

The following discussion and the generalizations made must be understood to be limited to the scope of the present investigation. in this section, each hypothesis is first restated and then discussed.

Hypothesis I. There will be a negative correlation between chronological age (CA) and incidence of verbalism (VE).

Reference to Table 5 indicates that there was a significant negative partial correlation at the .05 level of confidence between CA and VE. Thus, the prediction involving this hypothesis was borne out. The older children should have had less verbalism because of more experiences with common objects such as those under consideration. They should have had more opportunities for experiences with these items because of their age. The data supported these assumptions. Scott and Myers (1923) found that accuracy of concepts increased with age in seeing children. Reichard, Schneider, and Rapaport (1944) found levels of conceptual development at different age levels. Piaget (1929) and Curti (1950) obtained similar results. The younger children of the present investigation indicated a greater degree of verbalism with the items in the scale suggesting that blind children especially need earlier, more direct, firsthand experience with their environment if verbalism is to be reduced.

The significant negative correlation between CA and VE suggests (since VE is being reduced as CA increases) that VE may not be an enduring problem among blind children. Although the purpose of this investigation was not to measure the extent of VE among blind children, VE persisted among the blind children even on words so common that all of the *Ss* defined them acceptably. The instrument used in this study did not attempt to measure VE on more difficult words which these *Ss* should normally acquire due to their increased age and experience. Since research has indicated that vocabulary increases very rapidly as CA increases, it may be assumed that VE would show a comparable increase. There-

fore, although this hypothesis suggests that VE diminishes with CA on very common and simple words, experience must be deliberately provided for children of all ages to help them to reduce VE and to give them a better understanding of objects common to their surroundings.

Hypothesis II. There will be a negative correlation between chronological age (CA) and incidence of visually oriented verbalism (VV).

Reference to Table 1 indicates that the greatest number of VVs used by any *S* was seven for 39 words. Only 15 *Ss* demonstrated a single instance of this type of verbalism. Thus, it may be possible that the amount of VV was so small in this study that no correlation was revealed.

According to the results, this hypothesis must be rejected. Reference to Table 6 indicates that there is no evidence to suggest that CA is related to VV in any manner, negatively or positively.

Any or all of the following reasons may have acted to reduce the amount of VV revealed in this study: (a) The words themselves were not adequate to elicit VV; (b) The procedure followed in the administration of the scale did not encourage possible latent VV; (c) The *Ss* were drawn from residential school populations; (d) VV is not a statistically significant problem among blind children.

The words in the scale were not selected especially to elicit VV as they were in the studies by Cutsforth (1951) and Nolan (1960). In fact, they were screened by a committee of teachers to obtain a list which could be defined as easily with nonvisual as with visual terminology.

The procedure followed in the administration was neutral, permitting but not encouraging the use of VV. In a pilot study with eighteen blind Negro residential school children prior to the present study, the *Ss* were not only asked to define, but to compose a sentence using each of the test words. The results indicated that their sentences contained much more VV than their definitions. The sentence-making task was omitted in this scale in order to economize time.

Since the *Ss* were drawn from residential school populations,

pressure on them to use VV to gain social approval may have been limited. Since many of their associates at school were also blind, the *Ss* would not need to employ VV in their speech to gain approval of their peer group. On the other hand, these children may sometimes accept visual concepts from their teachers as more important than evidence from their own senses.

VV may not be a serious problem to blind children under any circumstances. The purpose of this study was not to measure the extent of VV among blind children, but to explore the relationships of certain variables to VV. Perhaps, the small range of VV among the *Ss* was a limiting factor in revealing any correlations that may have existed. The small amount of VV indicated in this study would tend to coincide with the results of the Nolan (1960) study.

Hypothesis III. There will be a negative correlation between intelligence (IQ) and incidence of verbalism (VE).

Reference to Table 5 indicates that there was a negative significant partial correlation at the .05 level of significance. Thus, the prediction involving this hypothesis was upheld. It was hypothesized that the brighter children would be more able to draw inferences, and to identify objects with which they had little or no direct experiential contact because of superior verbal knowledge about the objects under consideration, and because of their superior ability in reasoning and problem solving. The obtained relationship would indicate that the children with lower intellecual capacities need far more direct, deliberately planned, and frequent contact with their environment than their more intelligent classmates. A similar conclusion was reached in the results of Isco and Giller (1959), and the recommendations of Wallin (1955) for seeing children.

However, even the older, more intelligent children exhibited a surprisingly large amount of VE in connection with these simple words. They, too, need a wide range and variety of direct environmental interaction. They may need less time devoted to basic materials, and more attention given to developing breadth.

In bearing out hypothesis III, the relatively high negative correlation of VE with IQ may indicate that the "identification" section of this scale would be useful in the measurement of intellect-

ual capacity of blind children. Since VE was determined by identifications, the IQ-identification relationship would show a positive correlation equal to the IQ-VE correlation. The use of identification of items similar to these for such a purpose should be particularly useful with younger children because of the game-like nature of naming objects. The motivation was generally high, and the time of administration was relatively short. The identification of this group of 39 words was easily completed in a time period of ten minutes.

Limited contact with the real environment may tend to depress measured intelligence. If intelligence consists partly of the ability to organize concrete materials in space and time so as to carry out definite aims, and if the ability to organize concrete materials depends to some extent on past experience with these materials, limited contact with the environment should have some effect upon measured intelligence of these blind children.

Hypothesis IV. There will be a negative correlation between intelligence (IQ) and incidence of visually oriented verbalism (VV).

Reference to Table 6 indicates that the correlation of IQ with VV was not significant. Thus, the prediction involving this hypothesis was not upheld.

It was hypothesized that the more intelligent *Ss* would employ fewer visually oriented words since they have a larger fund concerning these objects, making it unnecessary to use such expressions in their speech. If the underlying purpose of VV is meeting social approval, and if children of higher intelligence feel this need more keenly than children of lower intelligence, then a positive correlation would be expected.

Children of higher intelligence should be more able to identify differences between their own responses and those visually oriented responses of their sighted associates. Since they have the ability to think and to speak in more abstract terminology, they could use these expressions more easily than their duller classmates. The more intelligent *Ss* gave fuller, richer, and longer definitions which provided additional opportunities for the use of VV. However, few visually oriented words were used by any of the *Ss* regardless of IQ. Nevertheless, this correlation was nonsignificant, and the hypothesis must be rejected.

Hypothesis V. There will be a negative correlation between experience (EX) and incidence of verbalism (VE).

Reference to Table 5 indicates that the prediction involving this hypothesis was borne out. A significant partial negative correlation at the .05 level of significance is indicated showing a negative relationship between EX and VE. It was believed that the *Ss* with the greater number of claimed experiences would show less VE than the *Ss* with the fewer number of such experiences. Previous familiarity with feeling and handling of the objects used in this scale appeared to help the children to identify them. Russell (1956) found the errors in concepts by seeing children resulted partly from lack of experience to check or validate the generalizations reached. The amount of tactual familarity needed by blind children would seem to depend on their CA and IQ.

Although CA and IQ are mostly predetermined, the experiences of the child with items within his environment can be more fully controlled. Thus, if these three variables were the only ones related to verbalism, the key to reducing verbalism among blind children would be to increase experiential interaction with their environment.

Ss tended to be able to identify items with which they had previously claimed experience. The children who claimed the fewest number of experiences indicated the largest number of verbalisms. Of course, many *Ss* may have had previous experience with the objects under consideration without being able to identify them. However, the significant correlation would indicate that children's claims of experience were very reliable.

The lack of experience shown so widely among *Ss* may be due to the fact that these children are not obtaining tactual experiences with items which are readily available visually to sighted children. Parents and teachers may be erroneously assuming that these children have had the necessary background of experience with these objects that are common to their environment.

The existing gaps in a blind child's experiential background may be filled by deliberately providing experiences with these missing elements. Provision may be especially necessary for the younger child and the duller child. However, if curiosity is developed, and mobility to travel is learned, the child himself may

be motivated to fill his own gaps. He should become increasingly independent of having to be directed in concrete learning experiences. The teachers and parents may find it virtually impossible to continue to fill all of the gaps requiring the child to accept more and more of this responsibility as he matures. The parents and teachers would help by teaching mobility and travel skills, and by stimulating the child's curiosity so that he will desire to explore his environment. They would need to continue to provide opportunities and freedom to explore. Incidental learning may often help the more mature child, but it will probably be necessary to deliberately provide for many concrete experiences with the younger child. A curriculum oriented toward learning by doing should provide for these experiences better than a more academically oriented approach.

There also seems to be an indication that the VE variable, as measured in this study, could be more simply measured in the future by the use of an experience inventory with word definitions. The administration and scoring of definitions and identifications for many words would be very time consuming. In addition, the investigation of VE by this scale was limited by the necessity of having items that could be easily handled. For example, the animate objects used in the pilot study were found to be too cumbersome for practical usage. This type of VE scale was restricted to the sampling of a small segment of the total environment of the *S*. Since there is a significant correlation between VE and EX, a more practical and a more comprehensive instrument might be obtained by omitting the identification section.

Hypothesis VI. There will be a negative correlation between experience (EX) and incidence of visually oriented verbalism (VV).

Reference to Table 6 indicates the correlation of EX with VV was not significant. The prediction involving this hypothesis was not supported. It was hypothesized that the children having more experiences with the objects in this scale would have less need for the use of visually oriented expressions borrowed from the experiences of sighted associates. However, *S*s with many claimed experiences were as high in the use of VV as the *S*s with fewer experiences. Approximately as many of the *S*s rating low in experience showed no VV as *S*s with a high rating in this variable.

Hypothesis VII. There will be a negative correlation between personal adjustment (AD) and incidence of verbalism (VE).

Reference to Table 5 indicates that the correlation of AD with VE was not significant. The prediction involving this hypothesis was not verified. It was expected that the degree of VE would be influenced by the degree of AD. Previous research had indicated that a high level of adjustment is characterized by keen interest and awareness of environment, and conversely a low level of adjustment is characterized by lack of interest and limited awareness of the environment. Although this relationship was supported in past research, there was no significant relationship between AD and VE in this study, and this hypothesis must be rejected.

Reference to Table 2 points out that AD correlated significantly with IQ in the first analysis. This significant relationship of the correlation ratio (Walker & Lev, 1953) was not repeated with the testing of the partial correlation between AD and IQ. However, the partial correlation technique (Wren, 1938) used in this study assumed linear relationships between variables. Reference to Table 3 indicates that the relationship of IQ to AD was nonlinear in an *F* test. An examination of the raw data reveals that the children in the lower ranges of intelligence generally scored relatively low on AD. Children of average intelligence usually scored somewhat higher. Children in the higher ranges were somewhat divided between high and low scores on this variable. It might be hypothesized that the children who deviate below normality in IQ have more trouble in adjustment with their classmates. Such a situation may be caused by differences in the maturity levels between these groups of children. Academic difficulty in school or parental rejection at home may also be important factors. Past research (Wallin, 1949) has indicated a relationship between intelligence and delinquency among children of below average intelligence.

Hypothesis VIII. There will be a negative correlation between personal adjustment (AD) and incidence of visually oriented verbalism (VV).

Reference to Table 6 indicates that the correlation of AD to VV was not significant. The prediction involving this hypothesis was not confirmed. It was hypothesized that the poorly adjusted

children would be more likely to lose faith in their own nonvisual experience and to accept visual descriptions of others. These children were expected initially to have attempted expression using their own impressions, later to lose faith in their own impressions and feel devalued, and subsequently to borrow from the expressions of their sighted peers. Consequently, this problem would be expected to be generalized to other areas of adjustment. However, children who scored high on the Tuddenham (1952) were as high in the use of VV as those who scored low on this scale. Therefore, hypothesis VIII must be rejected. Evidently, level of AD as measured by this reputation test has little relationship with VV.

A characteristic was noted in the responses of the *Ss* rating low in AD. More bizarre and unusual answers were used in the identification of the items than the ones who were rated high in AD. The *Ss* rating higher in AD tended to name accurately some characteristic of the item. For example, two of the *Ss* lowest in AD called a "clarinet" an "octopus" and a "gun." Two of the *Ss* rated highest in AD called it a "trombone" or a "horn." Although this hypothesis was rejected, a further exploration into the qualitative differences of the responses in relationship to adjustment may be desirable. It might be hypothesized that there will be a negative correlation between personal adjustment and "unrealistic" verbalism, rather than "excessive" verbalism as previously mentioned in the literature.

Summary and Conclusions

The primary purpose of this study was to explore the relationship of verbalism among blind children to age, intelligence, experience, and personal adjustment.

The subjects were a group of 40 blind children, heterogeneous in respect to sex and age within the limits of six years, one month to fourteen years, three months from eight cottages of two residential schools for the blind. All *Ss* had limitations from birth of central visual acuity ranging from light perception to total blindness. They were given the following scales in order to select 40 children to be used, and to explore the variables under consideration:

1. The administration of the scale to obtain definitions of the words
2. The identification of the selected items representing these words
3. The Tuddenham Reputation Test (1952).

Correlation ratios (Walker & Lev, 1953) were computed for six variables (CA, IQ, EX, AD, VE, and VV) to determine significant relationships. After linearity tests (Guilford, 1956), Pearson-Product Moment correlations (Walker & Lev, 1953) were obtained, and partial correlations were computed by the Wren (1938) method.

The following results were obtained:

1. As predicted, there was a significant negative correlation between CA and verbalism (VE).
2. As predicted, there was a significant negative correlation between IQ and verbalism (VE).
3. As predicted, there was a significant negative correlation between experience (EX) and verbalism (VE).
4. Not as predicted, there was no significant negative correlation between personal adjustment (AD) and verbalism (VE).

5. Not as predicted, there was no significant negative correlation between CA, IQ, experience (EX), or personal adjustment (AD) with visually oriented verbalism (VV).

The results suggested that verbalism does have a relationship to three of the variables investigated in this study. These variables are CA, IQ, and experience. Although the data indicated that the younger, the duller, and the less experienced children have a far greater need for increased contacts with their environmental surroundings, it does not imply that the older, the more intelligent, and the more experienced children do not also need such a program. It was concluded that since CA and IQ are largely predetermined, the key to the reduction of verbalism among blind children is the increasing of interaction with their environment.

The results also suggested that none of these variables correlated significantly with visually oriented verbalism. Although it was not the purpose of this study to explore the extent of visually oriented verbalism among blind children, it was concluded that the relatively small numbers of visually oriented verbalisms was an indication of either an inappropriate instrument or a lack of visually oriented verbalism among the subjects tested in this study.

Appendices

A. Background of Research and Theory

During the past century, research concerning verbalism in blind children has been meager. Research in concept development, an area closely related to verbalism, has been scanty when related to blind children. However, during the past decade, studies have been undertaken concerning concept formation in other handicapped and normal children. In addition, studies have been attempted with the purpose of identifying concepts needed by children as determined by analyses of textbooks used in reading and various subject matter areas. Personal adjustment may be related to verbalism through perception. Some research relating personal adjustment to perception and the measurement of personal adjustment by use of the reputation test is also cited. The related research studies which are discussed may be grouped into the following categories:

1. Verbalism among blind children
2. Concept formation of deaf and mentally retarded children
3. Conditions related to concept formation
4. Concepts in reading and other subject matter areas
5. Perception and concept development as related to personal adjustment
6. The reputation test.

Verbalism among Blind Children

Cutsforth (1951) investigated verbalism among 26 congenitally blind children. A word association test was given in which the child was asked to respond to words representing objects varying in their degree of sensory availability. Results revealed that nearly one-half of their responses contained the names of visual qualities. Only about 7 per cent referred to qualities of taste or smell, and approximately 3 per cent referred to qualities of hearing. The remainder denoted abstract qualities which did not refer to sensory experiences. Cutsforth concluded that the high percentage of visual responses given by the congenitally blind pupils demonstrated a very strong tendency to employ visual concepts when other sensory concepts were just as available, and more

meaningful to them. He concluded that the underlying purpose of verbalism was the meeting of social approval.

Nolan (1960) obtained free and controlled associative responses to the group of stimulus words used by Cutsforth (1951) from two groups of blind children. He found fewer visual responses than Cutsforth, and concluded that "verbal reality" was not a significant problem for the groups studied.

Maxfield (1936) used 30 to 50 minute observational periods in studying eight totally blind children. One of three subjects from thirty-eight to forty-two months of age used visual terminology in 6 per cent of his total responses. Two of five *Ss* from sixty-two to seventy-three months used visual terms in 2.1 and 1.9 per cent of their responses. The other *Ss* used nonvisually oriented words throughout their speech.

Bean (1932) described the language development of his son, who was blind until eighteen months of age. He noted that nearly 90 per cent of the child's vocabulary was composed of words denoting ideas derived from tactual, auditory, gustatory, and motor senses in addition to a few ideas that stood for light and color. After an operation which restored the boy's vision, visual terms multiplied in his vocabulary more rapidly than did those pertaining to the other senses.

These studies represent the research concerning verbalism, or concept development among blind children. The verbalism investigated was a special type of verbalism, which was determined by use of visually oriented expressions. All but one of these studies indicated that the use of visually oriented expression is not a serious problem among blind children.

Concept Development of Deaf and Mentally Retarded Children

Templin's (1950) study of the effects of the restriction of experience on reasoning included both verbal and nonverbal tests representing different levels of training. The deaf group was found to be from four to five years retarded on a battery of tests, and it was concluded that as the items became increasingly more abstract, the hearing impaired scored lower. The restriction of the environment because of residence in an institution did not result in lower scores on the reasoning tests. Reasoning test scores showed an increase with age and grade of the *Ss*.

Oleron (1953), also, found the deaf to be seriously retarded in nonverbal, abstract functioning by using a sorting test. It was concluded that the retardation in abstract behavior was the result of language retardation, and that the ability to understand, and to use abstract

terms should result in the development of conceptual thinking. It was noted that the verbalizations of this group in attempting explanations of their sorting behavior was at the concrete-description level.

Iscoe and Giller (1959), in a study of concept learning in 60 mentally retarded children using a sorting test, discovered that mentally retarded children tended to develop their own noncommunicable systems of concepts. It had been hypothesized that the older children would utilize conceptual systems closer in quality to the normal person than the younger children who lacked their background of experiences. It was concluded that these children developed their own noncommunicable systems due to their impoverished environment with lack of stimulation and satisfying experiences.

Wallin (1955), in reviewing concept development in the mentally retarded, recommended the following: (a) Provide the child with an abundance of concrete experiences in a greater variety of objects, processes, and occurrences; (b) Have the child arrange in progressive order a series of objects that differ by small amounts in characteristics such as weight, length, and roughness; (c) Have the child study a series of objects that are similar in one attribute, but different in many others; (d) Proceed from the simple to the complex by easy steps.

More research relative to concept study was found concerning deaf children than was discovered relating to blind children. This research generally was concerned with the failure of deaf children to develop much ability in abstract thinking. It was noted that the deaf were seriously below normally hearing children in nonverbal abstract functioning.

Mentally retarded children were found to develop their noncommunicable systems of concepts. More concreteness was recommended in teaching concepts to these children.

Conditions Related to Concept Formation

Welch and Long (1943) compared a group of children (10), varying in age from four to six years, with a group (15), ranging in age from six to eight years, using a battery of nine reasoning tests. Although it was found that the two groups were similar in so far as discovering principles was concerned, the older group was found to be superior on word problems. They concluded that this superiority might be attributed to the fact that the older children have had more experience with printed material. They discovered that children can manipulate, and reason more clearly with materials which they can completely identify con-

ceptually. Conversely, they may not reason clearly with materials which they cannot easily identify.

Reichard, Schneider, and Rapaport (1944) used sorting tests with 234 children of ages four to fourteen. The results indicated a steady increase in ability to group objects together which belong together with age growth, and in ability to give abstract, conceptual explanations of the groupings. Three levels of development were suggested: (a) a concretistic level (up to five or six years), in which classification tended to be made on the basis of nonessential, incidental features of the objects; (b) a functional level (up to eight or ten years), in which classification was on the basis of use or value; (c) a conceptual level, in which the child classified more nearly on the basis of abstract qualities.

Piaget (1929) did much to stimulate thinking, and to focus attention on characteristics of children's concepts. Using an interview method, he found that children's concepts change with increasing age. According to his conclusions, a child's thinking is characterized by realism, animism, and artificialism. He noted 17 various stages of growth of conceptual thinking.

Piaget concluded that this conceptual thinking progresses through four levels of development: (a) one and one-half to four years, development of symbolic and preconceptual thought; (b) four to seven or eight years, intuitive thought leading to the threshold of the "operation"; (c) seven or eight to eleven or twelve, groupings of thought concerning objects that can be manipulated through the senses; (d) eleven or twelve through adolescence, perfecting of formal thought.

Nagy (1948) obtained stages of conceptual development in a study of theories of death. Nagy investigated conception of death in 378 children from three to ten years of age using written compositions, drawings, and discussions. She found three stages of development of concepts: (a) three to five, (b) five to nine, and (c) nine and above.

Russell and Dennis (1939) investigated animism in children's concepts. They found a standardized method making it possible to classify children into four stages of animism. Evidence indicated that practically all of the *Ss*' responses showed evidence that their concepts fell into four stages of animism as defined by the experimenters.

Oakes (1947), using a group of kindergarten and elementary school children, reported that there was no evidence to corroborate Piaget's (1929) interpretation that there is a definite stage in the child's thinking which is characteristic of a given age. Oakes found that the types of answers given by the *Ss* were influenced more by the nature of the problem, the way the question was worded, the child's background of ex-

perience, and his vocabulary, than by any mental structure for a certain age. He concluded that understanding of essential relationships increases with age among children. The more intelligent children were hypothesized to be more likely to give physical explanations than the less intelligent children.

G. Stanley Hall (1907) reported data from several studies dealing with the concepts that children have upon entering school. He hypothesized that children at this age have experienced, and learned far more than they can express verbally. Also, he theorized that children often see objects a hundred times without acquiring consciousness of them. He compared the children with regard to several variables: rural-urban, sex, color, and urban center. His studies indicated differences in concept formation between boys and girls.

In reviewing investigations concerning concept formation, Russell (1956) listed five causes of errors in concepts: (a) errors in the precepts from which concepts emerge; (b) confusion between images and memories aroused during recall; (c) lack of experience to check or validate the generalizations reached; (d) set or suggestibility caused by certain features of the environment; (e) over-confidence in the results of one's observation and conceptual thinking.

Scott and Meyers (1923) reached a similar conclusion in an experiment in which two sets of exercises were given to pupils in grades five, nine, and twelve. The first set required the giving of examples of certain concepts, and the second was designed to check on the understanding of the examples given. An inconsistency was found between the ability to name items and the ability to give correct ideas of these items.

Some investigation has been attempted in an effort to determine methods to develop efficient concept formation. In summarizing investigations, Harlow (1951) stated:

> Furthermore the studies attest to the fact that broad concepts or principles do not generalize spontaneously from learning or overlearning any specific problem; breadth of concept is obtained from training in a wide variety of situations. Breadth, rather than intensity of training appears to be the key to efficient concept formation. (p. 469)

The results of studies on characteristics, development, and accuracy of concepts in children have been cited. There has been little research relating that which is known about developmental processes in other aspects of behavior to concept formation. The factors which seem to be related in varying degrees are age, intelligence, reasoning, experience, socioeconomic status, vocabulary, and sex.

Waters (1934) analyzed 50 primers and first grade readers for concept structure, and tested 31 kindergarten children to discover their knowledge of these concepts. The children were found to be lacking in experiences that were frequently mentioned in these books.

Hildreth (1935) used flash cards in a case study to test for concepts. Her findings indicated that word recognition depended upon previous experience and concepts previously formed. She noted that previous experience or association with an object or an experience that a word represented influenced the rate of learning.

Manwiller (1939) made a comparison of concepts needed by children in two basic readers with the concepts understood by children from 15 elementary school kindergartens. He reported that great variability was indicated in the experience background of the children, and that children with high mental ages tended to exceed children with low mental ages on understanding of concepts.

Studies of concepts in subject matter areas have been executed in several areas with children of primary grades through secondary school.

Meltzer (1925) examined 353 children from grades four through twelve on social concepts by use of interviews. The results indicated that the children's group of concepts was correlated positively with educational age, grade, MA, CA, and occupational status. He noted that in the lower grades the correlation between the grasp of the concepts and the number of words used was low, but in the higher grades the correlation was relatively high. A correlation of about +.69 was found between the number of words used and the accuracy of speech. He concluded that a large quantity of speech was not a sure indication of a large fund of knowledge.

A summary of a series of investigations was reported by Horn (1937) on the prevalence of erroneous concepts. Frequent and common lack in accuracy of concepts was found among elementary and high school pupils in the social studies.

A study of concepts in arithmetic by Buswell and John (1951) concerned the development of concepts of technical and semitechnical terms in the first six grades. The results indicated the *Ss* had only a partial understanding of terms which they are expected to use and which appeared in their textbooks.

Hart (1933) made a study of the common errors in geography by teachers and pupils. The errors attributed to children were found to be common among the teachers.

The concept studies in reading indicated that children in the early grades of school have vague and inaccurate concepts of words in their reading books. Experience and mental age were factors influencing concept development. Concept studies in various other subject matter areas pointed out that children from primary grades through high school have many hazy concepts of words which they use freely in their speech. Correctness of concepts increased in the higher grades. Errors were found to be traceable to a lack of association of words with correct images.

Verbalism, as investigated in the present study, depended upon the ability to identify a part of the environment. Since identification could be affected by the accuracy of perception of environment, references to research in the area of the relationship between personal adjustment and perception of the environment are cited.

Perception and Concept Development as Related to Personal Adjustment

Chordorkoff (1954), in studying the relationship between personal adjustment and perceptual defense within a normal group, found direct relationship between perception time and personal adjustment. Adjustment was determined by the congruence between a person's self-description and a description made by a clinician on the basis of psychological test evidence. The measure of perceptual defense was tachistoscopic recognition time for neutral and threatening words. Chordorkoff not only discovered that the higher adjustment *Ss* took a shorter perception time for threatening words, but also, that just the individuals in the upper adjustment group recognized the neutral words. One might conjecture that the higher adjustment individual could come to terms more adequately with environmental threat.

Seeman (1958) used a teacher rating scale in which teachers were asked to select the most maladjusted child, and the best adjusted child in their classes. The results indicated that the single characteristic most often chosen to describe the high adjustment child concerned response to his environment. He noted that the low adjustment child was characterized as either highly distractable by his environment, or impervious to it. The high adjustment child was characterized by the awareness of, and lively interest in his environment, but without the diffusion of the highly impulsive child. Among the other outstanding characteristics of the high adjustment child was acceptance of and by other children.

The results of Chordorkoff's (1954) and Seeman's (1958) studies indi-

cate that individuals of high adjustment have a greater awareness of their environment than individuals of low adjustment. Individuals of high adjustment, having this greater awareness of environment, would be expected to have a more realistic conception of the various parts of their environment. Individuals of low adjustment would be expected to have a more faulty conception of the various parts of their environment. This low adjustment group should be more likely to be higher in verbalism or to have a higher degree of faulty concepts of common items in their environment than the high adjustment group. On this point Maslow (1954) states:

> It is definitely possible that maladjustment or even extreme neurosis would disturb perception enough to affect acuity of perception of light or odor.

It appears very likely that perception may be connected with adjustment. Accuracy of perception would seem to influence concept development and growth of verbalism. If this is true, adjustment and verbalism would be related.

Reputation Test

Seeman, Barry, and Ellinwood (1957) used the Tuddenham (1952) to select children for "high adjustment" and "low adjustment" groups in a play therapy situation. They were able to obtain significant differences between the two groups for at least two of three dimensions of behavior. Tuddenham (1952) demonstrated the value of the reputation test in the diagnosis of social adjustment by means of case studies based on clinical material. Lewis (1959) observed that the results of a reputation test demonstrated a high congruence with parental ratings, achievement tests, and clinical judgments.

Gronlund (1959) reported a number of studies demonstrating the close relationship between sociometric test scores such as the reputation test and personal-social adjustment. In his review of studies in this area, he summarizes,

> In general, studies have shown that sociometric results are significantly related to the actual behavior of pupils, to teachers' judgments of pupils' social acceptance, to adults' ratings of pupils' social adjustment, to the reputations pupils hold among their peers, to specific problems of personal adjustment. Pupils with high sociometric status are generally characterized by feelings and behavior which are indicative of good personal-social adjustment. In contrast, pupils with low sociometric status tend to have socially ineffective behavior characteristics, and tend to exhibit evidence of poor personal-social adjustment. (p. 183)

The reputation test has not only demonstrated its value in the selection of individuals on the dimension of personality functioning,

but it has also demonstrated relatively high reliability. Tuddenham (1952) tested the constancy of the Tryon Reputation Test (1939) in a fifth grade group. Individual interviews followed after a two-month interval by written group testing showed the two sets of data in close agreement. Tryon (1939) found high retest coefficients using her reputation test over a ten-day interval with seventh graders. Hartshorne, May, and Maller (1929) reported a split-half correlation of 0.88 on a ten item "Guess Who" Test, a sociometric test very similar to the reputation test.

Summary

Although verbalism has been mentioned as a definite problem in the literature on the education of the blind, the available research was scanty and incomplete. Verbalism, consisting of visually oriented responses, was found to exist among blind children by several experimenters. A type of verbalism may occur if children are able to define or use words acceptably but are unable to identify the items which the words represent. No study was found that explored this aspect of verbalism among blind children.

Since there was little to relate concerning verbalism among blind children, research concerning concept formation and perception among deaf, mentally retarded, and nonhandicapped children was discussed. These studies were considered since verbalism may be caused by inaccurate and vague concepts resulting from insufficient sensory experiences. Research concerning concept development was cited indicating that age, intelligence, experience, and other factors may be related in varying degrees to concept formation. Research was mentioned which indicated that there is a relationship between personal adjustment and perception of the environment. The use of the reputation test as a measure of personal adjustment was discussed.

B. Pilot Study

The pilot study was designed to investigate verbalism among blind children. Exploratory data were needed on which a more complete study of verbalism could be based. More specifically this investigation was devised to:

1. Determine words which could best be used in a scale to measure verbalism among blind children of chronological ages six years, seven months to twelve years, six months.
2. Explore the extent of verbalism in six experience areas.

3. Determine words which could be most practically represented by tangible objects.

4. Determine practical aspects of construction of a measure of verbalism such as length of test, objectification of administration, and scoring.

5. Explore the effects of other variables on verbalism (VE) such as CA, MA, years in school (YS), experience (EX), vocabulary (VO), and visually oriented verbalism (VV).

Selection of Subjects

The subject sample consisted of a group of 18 Negro children from ages six years, seven months to twelve years, six months enrolled at the State School for the Blind and Deaf in Raleigh, North Carolina. Eight boys and ten girls met the visual acuity limitations of light perception to total blindness as determined in the latest ophthalmological examinations. Previous IQ test data were available on 12 of the 18 children. One Wechsler Intelligence Scale for Children (1949), and 11 Interim Hayes-Binet (1950) tests revealed MA's ranging from six years, three months to eleven years, eight months.

Six children came from urban backgrounds as compared with 12 from rural neighborhoods. Five children resided with foster parents. The number of years in school ranged from one to six years for these kindergarten to fifth grade children.

Materials and Procedure

Nouns were randomly selected from the Gates' list, *A Reading Vocabulary for the Primary Grades* (1935). Selection by random numbers was continued until 20 suitable nouns were obtained for each of the six categories representing areas of experience. A word representing an object that was inaccessible such as "monkey" was discarded, and a new word was drawn in its place. In several instances words were grouped in one category that could have easily fitted into another division. These words were in the categories of "farm" and "nature," and "community" and "home." The most distinct classes were "food" and "clothing." The instrument was divided into two sections—the verbal section and the performance section.

The purpose of the verbal section was to determine whether the child could give an acceptable definition of a word and use it correctly in a sentence. The child was asked if he had heard, felt, tasted, or smelled the object represented by the word in order to measure past experience.

In the performance section, children were asked to identify the objects which represented the words in the verbal scale. Identification was made by tactual (112 items), olfactory (7 items), and gustatory (12 items) means. Several items could be identified by a combination of the sensory modalities. Several items were omitted due to inaccessability of the items at the time of testing. Some words had been drawn representing items that were seasonal such as "tulip."

A verbalism occured when the *S* could give an acceptable definition of a word but could not correctly identify the object symbolized by the word. A definition was acceptable if any part of the definition was applicable to the item being represented. A visually oriented verbalism was counted for each item in which a word definition or sentence contained visual connotations such as colors.

Results and Discussion

The time needed for each *S* in the administration of the total instrument varied from five to six hours requiring from three to six sessions. Although rapport seemed to be generally well established, misunderstandings of words occurred occasionally among the younger children. For example, "tie" was sometimes defined as "tire," and "cape" as "cake."

Verbalisms were much greater in some experience areas than in other experience areas. Verbalisms were greater in classes most removed from the home. "Farm" and "nature" proved to be the most difficult categories in identification of items.

An inspection of Table 7 reveals that the number of verbalisms varied widely from 14 under "home" to 118 under "nature." The verb-

TABLE 7
Descriptive Data for Comparing Verbalism in Six Experience Areas
($N = 18$)

Areas	*Items*	*Verbalism*	*Per Cent*	*Mean*	*SD*
Home	17	14	4.6	.82	.77
Clothing	20	65	18.1	3.25	3.90
Community	20	66	18.3	3.30	4.11
Food	20	90	25.0	4.50	4.47
Farm	20	110	30.6	5.50	4.81
Nature	15	118	43.7	7.87	6.73
Total	112	463			

alism percentages of total items in a section showed a range from 4.6 per cent under "home" to 43.7 per cent under "nature."

From Table 8, it can be seen that a significant *F* ratio was obtained indicating that differences in means of experience areas could not be attributable to chance at the .05 level of confidence. A Hartley test (Walker & Lev, 1953) was performed in which the *F* max of 8.74 did not fall in the critical region.

TABLE 8
Analysis of Variance for Comparing Verbalism in Six Experience Areas ($N = 18$)

Source of Variation	*Sum of Squares*	*df*	*Mean Square*	*F*	$F_{.05}$
Experience areas	93.34	5	18.67	4.83	2.32
Individuals	362.56	17	21.33	5.53	1.75
Error	328.27	85	3.86		
Total	784.17	107			

When *t*-tests were used on differences between pairs of means, significant differences occurred between the nine sets of scores as tabulated in Table 9.

TABLE 9
Summary of *t*-tests for Determining Significant Differences Between Pairs of Verbalism Scores ($N = 18$)

Home	*Clothing*	*Community*	*Food*	*Farm*	*Nature*
Home	3.86*	4.48*	6.80*	8.54*	8.05*
Clothing		0.07	2.05	3.62*	3.83*
Community			1.94	3.50*	3.72*
Food				1.54	1.97
Farm					0.56
Nature					

* Significant at .05 level.

These children scored significantly higher in verbalism in all experience areas which were paired with "home." They, also, scored significantly higher on "farm" and "nature" when paired with either "clothing" or "community."

As could be expected, verbalism varied greatly from item to item. Several items proved not only difficult to identify, but also difficult to define, resulting in relatively low verbalism scores for these items. However, ten children defined 107 or more of the 120 words acceptably. Although representative models may not have been obtained in some cases, "violin" was the only object missed by all children. A multiple choice technique of identification might have resulted in less verbalism. For instance, "velvet" could be correctly identified as "cloth," yet credit was given only when it was identified as "velvet." In such a case, the child was asked for more complete identification, and he was given ample opportunity to refine his answer.

Some items were found to be impractical to identify because of difficulty in locating true representations of the words. Some children feared the animate objects, and some were ambiguous. None of the "home" items provided any consistent difficulty. Sixteen children failed to identify "nightgown," usually identifying this item as a "slip." "Pumpkin," "plum," "rice," and "lettuce" were surprisingly difficult foods to identify. "Plum" was an item identified by gustatory instead of tactual clues since canned plums were used. "Rice" was evidently difficult to identify due to its smallness of size and similarity to other grains. "Lettuce" was an item often tactfully identified as "salad" or "cabbage." "Violin" represented the most difficult of the "community" items, being identified most often as a "guitar." "Duck," "kitty," and "turkey," were frequently missed among the "farm" items. The "duck" was apparently a poor specimen, and the "kitty" was confused with "dog." The noise from the "turkey" caused anxiety which resulted in hasty identification. Six of the eight most difficult items under "nature" were stuffed animals. The "fish" and the "worm" probably were more difficult because of the smallness of their size.

In 28 items, or in 25 per cent of the test items, no verbalism was indicated whatsoever. In fact, 56 items, or 50 per cent of the total items yielded no more than two verbalisms per item out of a possible 18. Items such as "door," "floor," "sandwish," "coat," and "shoe," were evidently well within the experience of the population represented.

An analysis of items was made by comparing the upper and lower 27 per cent of the individual scores according to number of verbalisms. None of the items under "home" seemed to distinguish between the

upper and lower groups. Eleven items under "community," 11 items under "clothing," nine items under "food," 14 items under "farm," and 11 items under "nature" indicated distinction between the two groups.

The results of Spearman-Brown rank order correlations (Walker & Lev, 1953) as illustrated in Table 10 indicate that verbalism (VE) correlated relatively low with visually oriented verbalism (VV), CA, years in school (YS), vocabulary (VO), and experience (EX).

TABLE 10

Intercorrelations of Verbalism, and Visually Oriented Verbalism with Behavioral Variables ($N = 18$)

	VE	*VV*	*CA*	*YS*	*VO*	*EX*
VE		.16	.16	.32	.42	.41
VV			.71	.76	.80	.69
CA					.49	.49
YS					.66	.47
VO						.78
EX						

The obtained correlations may be somewhat misleading. A most limiting factor was imposed by not requiring that each child define each word in the verbalism scale. Verbalisms were limited among younger, duller, and lesser experienced children who were unable to define many words. A child defining few words could obtain a lower score than a child defining many words while identifying fewer objects.

A fairly accurate measure of VE might be obtained by comparing definitions and claimed experiences. In 77.5 per cent of the cases, children were able to identify items with which they claimed previous sensory experience. Children were able to identify 86.4 per cent of the items with which they had claimed previous sensory experience when 17 of the most difficult items were eliminated.

Rural-urban background and sex were used as a basis to make comparisons on VE and VV. The results of *t*-tests, shown in Table 11, reveal that the rural children were significantly higher in VV than urban children. No differences were found in the other comparisons.

TABLE 11

Summary of *t*-Tests for Determining Significant Differences Between Pairs of Rural-Urban and Male-Female Scores in Verbalism ($N = 18$)

		Visually Oriented Verbalism			*Verbalism*		
	N	*Mean*	*SD*	*t*	*Mean*	*SD*	*t*
Rural	12	9.25	44.68	2.32*	24.75	18.75	.095
Urban	6	3.67	14.67		28.00	84.80	
Male	8	7.25	135.14	.05	24.75	36.21	.65
Female	10	7.50	62.50		26.70	44.68	

* Significant at .05 level.

Summary and Conclusions

The present pilot study was undertaken in an attempt to obtain a measure of verbalism among blind children. Words were selected from the Gates' list (1935) by random numbers until 20 words were found for each of the six experience areas. Children were then asked to define each word. If they were unable to identify the item that the word represented, a verbalism was counted. The verbal and performance sections were given separately to each of 18 blind Negro children who had no better vision than light perception. The following conclusions were reached:

1. Verbalisms were greater in experience areas most removed from the home.
2. Some of the items that had been drawn by random sampling were found to be impractical to represent or to identify.
3. At least half of the words were well within the experience of the *Ss* represented. The use of such familiar words in future studies with similar *Ss* was felt to be unnecessary.
4. Since each *S* was not required to define each word in the scale, obtained correlations were limited.
5. Children were generally able to identify items with which they had previously claimed experience.
6. The length of the test proved to be too time consuming for practical usage.

7. No significant differences were found between rural-urban and male-female groups on verbalism or between the male-female groups on visually oriented verbalism.

8. Rural children were significantly higher in visually oriented verbalism than urban children.

C. Implications for Research

Previous research and literature have pointed out verbalism as a problem among blind children. The results of this study indicated that certain of the examined variables were related to verbalism. Additional research is needed to determine the best methods for reducing verbalism among blind children.

Verbalism, as defined in this study, occurred when a child gave an acceptable definition of a word but could not accurately identify the object symbolized by the word by some sensory means. Two possible alternatives for reducing verbalism are: (a) control the vocabulary in educational materials for the blind; (b) increase the ability of the blind child to identify objects represented by the words in his vocabulary.

If alternative one is chosen, it would become necessary to develop special educational and reading materials restricted to those which the blind child's experience allows him to know at more than a verbal level. At the present time, unadapted educational materials are transcribed into braille. Few, if any, efforts are made to alter materials prepared for sighted children in order to make them more suitable for blind children. Words representing objects which are unfamiliar or difficult to represent might be omitted or their use limited until an appropriate time. In this study, words such as "rabbit," "mouse," and "squirrel," elicited a high degree of verbalism. Most sighted children would have gained a familiarity with these animals when they were common to their environment through vision. Otherwise, it would be a simple task to illustrate these animals with pictures in the books or with materials supplied by the teacher. However, the blind child does not have these opportunities for visual experience. The gap can neither be easily filled by pictures or materials, nor can it be left to chance that he will obtain concrete experience.

Since a majority of blind children are now educated in classes along with sighted children, it would be impractical, if not virtually impossi-

ble to prevent them from being exposed to such visually oriented concepts. The construction of special reading materials for them may also cause them to be more isolated from their sighted classmates. Thus, research may not be desired to ascertain the range of experiences which can be successfully attained by blind children in order to design special materials.

If the second alternative is chosen, it would become necessary to study the methods of increasing ability to identify objects in the environment. Certain factors were noted in this study which may be helpful in determining the methods for increasing the ability to identify objects. Range, frequency, and variation may be important factors to consider in exploring ways to reduce verbalism among blind children.

The range of types of experiences for a blind child is restricted to a much smaller segment of his environment than the range for the sighted child. The items used in this study were items that were easily accessible. Blind children are more likely to be familiar with these objects than with many items which are more difficult to obtain. Even so, a considerable amount of verbalism was indicated. Thus, it may be implied that verbalism concerning less accessible items would be of a much greater magnitude. Sighted children may accumulate a much wider range of experiences through the use of the visual modality and through incidental learning. Experimentation to determine existing differences in experience between sighted and blind children would seem to be helpful in planning for the activities of blind children.

The frequency of contact needed in order to enable one to identify objects probably varies from child to child. However, blind children have fewer sensory means at their disposal than sighted children, and the nature of their remaining sensory channels is such that frequency of contact is naturally restricted. A relatively higher frequency of contact may increase the probability of incidental learning for seeing children. For example, "rabbit" was a word eliciting verbalism in this study. A sighted child may see a rabbit at the pet store. Subsequently, he may see a picture of a rabbit at school. A blind child may see a rabbit at the pet store by tactually exploring parts of the rabbit. He may not be able to see a rabbit again until he returns to the pet store. Frequency of contact with a rabbit is limited by his limitations in mobility and sensory capacity. This would imply that a greater number of deliberately planned contacts is needed by the blind child than by his sighted companion. Russell (1956) indicated that lack of experience to check or validate generalizations caused errors in concepts. Research to determine not only the number of contacts, but the nature and quality

of contacts needed for identification would seem to be helpful in order to reduce verbalism among blind children.

The variation of presentations of objects to blind children is a function that may be important in reducing verbalism. Harlow (1951) mentioned that breadth rather than intensity of training appears to be a key to efficient concept formation. The children in this study who claimed contact with items used in the scale were often unable to identify these items. Although there was a significant negative correlation between verbalism and experience, it was not as high as expected. These children not only need contacts, but also a variation of contacts so that the richness of their concepts can be increased. This aspect was indicated by the closeness of many of their answers to the correct answers. For example, "violin" was often identified as "guitar"; a "tangerine" as an "orange"; and a "hoe" as a "shovel." The answers generally tended to name an item with some similar characteristic. Thus, it may be inadequate merely to present many items on numerous occasions, but rather it may be necessary to present many items on numerous occasions in a variety of circumstances. The item is probably best learned in its proper context. For example, a "violin" would be studied in a unit with other similar musical instruments when the similarities and differences could be deliberately pointed out. Experimentation to determine the number and kinds of variations needed would seem to be helpful in planning for reduction of verbalism.

In considering any of these methods of reducing verbalism, the characteristics of each child must be considered. In this study, significant relationships were discovered between verbalism and three variables. These variables—chronological age, intelligence, and experience—should be considered in reducing verbalism among blind children. The amount of concreteness needed by children from impoverished backgrounds would not be the same as needed by children from more stimulating backgrounds. It would seem to indicate that educators of the blind must determine the varying need for concreteness by children at various levels of intelligence, age, and experience.

An additional problem for research may be to determine how much verbalism is desirable. Previous literature has indicated that verbalism may have a negative effect upon personality as well as academic learning. The results of this study indicate that there is no significant relationship between verbalism and personal adjustment. Thus, it would seem to imply that there is no adverse effect on personality. However, this study did not attempt to determine the negative effect upon academic learning. Cutsforth (1951, p. 61) mentioned, "Too rapidly thrust-

ing the blind child into a world of unreality produces loose and uncritical habits of thinking." It seems that thinking can not be very clear when relationships are obscure. He added, "Nothing but highly uncritical and loose habits can be produced when warped concepts, false values, and judgments lacking validity are the material from which they must be built." (1951, p. 62) Future research would seem to be needed to determine the relationship of verbalism to academic learning.

Observations during testing indicated that most of the objects were identified by the *Ss* in a matter of a few seconds. Although a period of fifteen seconds was allowed for examination of each object, identification or misidentification was usually made before complete exploration of the whole object. An exploration to study the cues in identification would be helpful in finding ways to reduce verbalism.

The children in this study occasionally recognized parts of various objects, but were unable to identify the wholes which the parts composed. For example, "trombone" was called a "pipe" or a "funnel on a stand." According to research and learning theory, the sighted child sees as a whole and later begins to recognize the parts and their relationship to the whole. It would appear that the blind child has more difficulty in attaining this wholeness because of the lack of the unifying sense of vision. He is continually exposed to parts which he must integrate to make wholes. A synthetic approach might offer him certain advantages that would be helpful in learning about his environment. Implications from the results of this study may point to the investigation of the analytic versus the synthetic approaches in the education of blind children.

The underlying purpose of verbalism according to the results of this study, may not be that of meeting social approval as suggested by Cutsforth (1951). He defined verbalism as a condition existing in any situation demanding the use of abstract concepts not verified by concrete experience. The abstract concepts were explained as being visually oriented expressions. He hypothesized that these expressions were used by the blind in order to conform to the world of their sighted associates gaining for them the accompanying social approval.

However, the verbalism measured in this study was not limited to the type measured by Cutsforth (1951). Verbalism was not confined to the use of visually oriented expression. Although both kinds of verbalism were examined in this study, only the verbalism of the broader scope seemed to cause any difficulty for the subjects. The problem is apparently not only much broader in scope among the blind, but it is

also less easily recognized. Blind children are undoubtedly called upon to use many types of abstract terminology without verification by concrete experience. Unwarranted use of meaningless visual expression is implied to be a problem of smaller scope. Although visually oriented verbalism is more obvious and generally causes more alarm, this research has inferred that it is not now as serious a problem as implied by Cutsforth (1951). The use of verbalism to gain social approval may be the underlying purpose of visually oriented expression. However, it is felt that the greatest demand for the use of abstract expression comes through lack of experience rather than desire to gain social approval.

IMPLICATIONS FOR EDUCATION

Implications for education may be drawn from the results of this study. Since there is little knowledge verified by research, not as many implications can be drawn in regard to education of blind children. These implications involve drawing some inferences that may need further experimental evidence for support, but they seem tenable in the light of presently available information. It was pointed out that some degree of operationally defined verbalism existed among the blind *Ss*. This verbalism was correlated with at least three variables explored in this study. These results may be significant in the educational planning for blind children. A certain amount of abstractness has been considered expedient as children become older and are better equipped to think in less concrete terms. A sound basis in concrete and practical experience is indicated as desirable for clarifying and strengthening basic concepts before moving into abstractness. This program of concreteness would need to be broader in earlier years of development than in later years. Certain results would occur as this base is broadened: (a) the fundamental concepts of each child would become more rich, varied, and inclusive; (b) the capacity for meaningful abstract thinking could be increased. Welch and Long (1943) found that children could think more clearly with materials they could completely identify conceptually. Thus, the age of the child will help to determine the need for concrete experiences.

Similarly, children apparently need more concreteness in the lower ranges of intellectual development than in the upper ranges. Since hypothesis III was substantiated, it may indicate that the children who rank below normal in intellectual functioning have the greatest need for a school curriculum which provides a maximum number of real, vivid, practical experiences dealing with concepts which are appropri-

ate for their period of development. The brighter children need some of this type of program, also. However, they are apparently better equipped to think abstractly, to make inferences, to draw conclusions, and to build meaningful concepts from a narrower base of these practical environmental contacts. Thus, the more intelligent children may devote more time to developing breadth, whereas the duller children may need more time devoted to the learning of basic materials.

Children with limited experience also need more concreteness than children from richer backgrounds of experience. The results of this study indicated that experience was significantly related to verbalism. The children with the least experience were highest in verbalism. It may be implied that verbalism among these children can be reduced by increasing experience. Although age and intelligence are largely predetermined, experience can be controlled. Verbalism among blind children can be reduced by education that provides a rich, stimulating environment. The sighted child is stimulated by vision. He may see an object that would cause him to move toward it to explore the item more completely with other sensory modalities. The blind child lacks this natural excitation from the visual sense. He is not stimulated by vision to get up and move toward objects. This stimulation needs to be present to encourage making use of the remaining senses. More stimulation from listening, feeling, tasting, and smelling is needed. The implications point to research in adaptation of methods and materials in classroom instruction to include stimulation of the blind child through the remaining sensory modalities.

The results of this study may more forcibly emphasize that blind children need a unique program in order to help them learn simple concepts that sighted children have developed through incidental learning. The words used in this study were so familiar that a six-year-old *S* was able to define all of them. Yet, the oldest child of fourteen could not accurately identify 24 of the 39 objects represented by the words. It was found that a girl who played trumpet in the school orchestra was not familiar with a trombone. Several children who had extensive auditory experiences with violins could not tactually identify a violin. It seems that it cannot be assumed, as with sighted children of comparable characteristics, that blind children have a familiarity with the items about them which they mention in their speech. Sensory limitation imposed by blindness handicaps them in gaining a reality knowledge of these objects. The sighted child is able to see these objects as real objects or as realistically pictured in books, newspapers, or on television. The blind child must actually touch and handle these items

to gain the necessary familiarity. Thus, it seems necessary to provide the blind child with experiences with common objects which are usually acquired incidentally by the sighted child. This requires a unique program with additional demands.

It was indicated that the blind child is at a disadvantage in observing objects as a whole and in relating these objects to other parts of his environment. He lacks the unifying sense of vision which draws experiences with these objects together as a whole. In this experiment, the *S*s tended to misidentify objects by naming objects with similar characteristics from the same classification. Unit teaching is a method which would be one approach toward reducing this type of verbalism by unifying experiences together in meaningful wholes.

Although it was not a purpose of this study to investigate the degree of verbalism or to determine how much verbalism is desirable in school, it was noted that a relatively large amount of verbalism existed among the *S*s. It is felt that this indicates that verbalism continues to be an important problem in the education of blind children. It is hoped that this study will serve to cause educators of the blind sufficient concern to examine current programs in day and residential schools in order to find ways and means of reducing verbalism among blind children.

D. Tuddenham Reputation Test

Instruct each child as follows:

> *I want to see how good you are at guessing the names of children in your room. I'll tell you just what these children do, and you tell me who I'm talking about. It may be one person or two or three. Sometimes it might even be you.*

Item	*Title*	*Symbol*	*Item*
−1	Wiggly		Which children wiggle a lot and can't sit still?
+2	Quiet	Q	Which children sit very still and quiet?
+3	Popular	P	Who are the ones everybody likes?
−4	Not many friends		Who are the ones nobody likes very much?
+5	Full of fun	FF	Which children are always smiling and laughing? (are full of fun?)
−6	Serious		Which children don't smile very much and seem sort of sad?

Items	*Title*	*Symbol*	*Item*
−7	Quarrelsome		What children quarrel a lot? (get into arguments?)
+8	Not quarrelsome	Q[1]—	What children hate to quarrel? (don't quarrel much and keep out of arguments?)
−9	Doesn't take chances		Which children get scared of everything? (are 'fraidy cats?) (are too scared to take chances?)
+10	Takes chances	C	Who are the bravest and almost never get scared? (take big chances and are not easily scared?)
−11	Bossy		What children are bossy? (try to run things?)
+12	Not bossy	B—	Which children let other children boss them? (usually give in?)
−13	Poor sport		Which children are poor sports? (are poor losers?)
+14	Good sports	S	Who are the good sports? (good losers?) (play fair?)
−15	Bashful		Which children are the most bashful? (hate reciting?)
+16	Not bashful	Ba—	Which children aren't the least bit bashful? (don't mind reciting?)
+17	Good at games	G	Which children are the best at ourdoor games?
−18	Not good at games		Which children aren't very good at games?
−19	Gets mad easily		Which ones get mad the easiest?
+20	Doesn't get mad	M—	Which ones don't get mad much?
−21	Sissy		What boys are the worst sissies?
+22	Real boy	RB	Who are the real boys—the regular fellows? (are never sissies—they just act like boys?)
−23	Tomboy		What girls act like tomboys? (act like boys and play boys' games?)
+24	Acts like little	LL	What girls act like little ladies?
+25	Best friend	BF	Who's your best friend?

E. Verbalism Test

Name..... Sex..... Grade..... Date.....
Cottage..... School..... Date of birth.....
IQ..... Test..... Date..... CA.....
Visual acuity..... Test..... Etiology.....
Urban–rural..... Socioeconomic..... Parents.....
Years in res. school..... Years in day school.....
General observations.....
.....
.....
.....
.....

1. IQ .....
2. CA .....
3. Experience .....
4. Adjustment .....
5. Verbalism .....
6. Visually oriented verbalism .....

Word	*EX*	*Definition*	*Def. Sc.*	*Ident.*	*Id. Sc.*	*VE*	*VV*
1. Apron							
2. Bonnet							
3. Chick							
4. Clarinet							
5. Clippers							
6. Duck							
7. Apple							
8. Fish hook							
9. Flag							
10. Flute							
11. Banana							
12. Screw							
13. Grasshopper							
14. Hoe							
15. Kite							

Word	*EX*	*Definition*	*Def. Sc.*	*Ident.*	*Id. Sc.*	*VE*	*VV*
16. Mouse							
17. Grapes							
18. Hinge							
19. Plow							
20. Rabbit							
21. Rake							
22. Ribbon							
23. Rice							
24. Cherries							
25. Saw							
26. Pear							
27. Orange							
28. Lemon							
29. Sponge							
30. Squirrel							
31. Tangerine							
32. Tractor							
33. Trombone							
34. Mouse trap							
35. Umbrella							
36. Velvet							
37. Violin							
38. Cigar							
39. Xylophone							

F. Raw Data

The original data collected in this study are presented for the purpose of making this data available to others who may wish to make additional analyses. Included in Table 12 are the subject number, sex, chronological age (CA), intelligence quotient (IQ), experience (EX), adjustment (AD), verbalism (VE) and visually oriented verbalism (VV). Note that MA and CA are given in months. Experience is the number of experiences claimed allowing one for each of the 39 objects in the scale. Adjustment is the algebraic sum of the "plus" (+) and "minus" (—) responses received on the Tuddenham (1952) plus 50.

TABLE 12

Original Raw Data

N	*Sex*	*CA*	*IQ*	*EX*	*AD*	*VE*	*VV*
1	M	123	104	31	53	22	3
2	F	150	87	29	53	26	7
3	M	154	126	34	51	17	1
4	M	169	132	33	18	9	2
5	F	106	115	37	59	20	2
6	M	132	114	34	65	9	1
7	F	125	74	24	55	34	0
8	M	147	123	39	72	9	1
9	F	109	77	28	50	31	0
10	F	136	65	37	23	21	1
11	F	102	86	22	48	29	0
12	F	145	100	35	45	16	7
13	F	136	92	32	56	20	4
14	M	136	85	37	56	17	0
15	F	121	115	27	58	24	1
16	M	132	103	36	68	22	0
17	F	114	108	30	65	25	2
18	F	134	87	28	56	32	0
19	F	131	108	24	72	23	8
20	F	161	78	28	46	26	1
21	F	142	105	30	71	16	1
22	M	146	119	31	49	18	5
23	F	142	95	23	21	21	3
24	F	135	95	39	55	22	4
25	M	137	102	31	81	15	0
26	F	151	103	31	49	20	0
27	F	148	101	24	50	21	0
28	F	140	108	31	63	13	0
29	M	150	85	30	52	20	0
30	M	83	125	25	86	25	1
31	F	148	115	38	62	8	1
32	F	171	91	36	54	24	4
33	F	164	113	26	74	22	0
34	M	151	76	31	8	27	0
35	F	108	93	24	44	27	1
36	M	138	90	21	64	26	0
37	F	121	118	30	50	13	5
38	M	145	82	24	27	32	1
39	F	128	100	30	47	22	0
40	M	128	110	29	45	32	1

References

Bean, C. H. An unusual opportunity to investigate the psychology of language. *J. genet. Psychol.*, 1932, *40* (Mr), 181-201.

Buswell, G., & John, L. *The vocabulary of arithmetic.* Supplementary Education Monographs, Chicago: The University of Chicago Press, 1951.

Chevigny, H., & Braverman, S. *The adjustment of the blind.* New Haven: Yale University Press, 1950.

Chordorkoff, B. Self perception, perceptual defense and adjustment. *J. abnorm. soc. Psychol.*, 1954, *49* (2), 508-512.

Curti, Margaret W. Child development: X concepts. In W. S. Monroe (Ed.), *Encyclopedia of educational research,* rev. ed. New York: The Macmillan Co., 1950. Pp. 175-177.

Cutsforth, T. D. *The blind in school and society.* New York: American Foundation for the Blind, 1951.

Downie, N. M. *Fundamentals of measurement.* New York: Oxford University Press, 1958.

French, R. S. *From Homer to Helen Keller.* New York: American Foundation for the Blind, 1932.

Gates, A. I. *A reading vocabulary for the primary grades,* rev. ed. New York: Bureau of Publications, Teachers College, Columbia University, 1935.

Gronlund, N. E. *Sociometry in the classroom.* New York: Harper & Bros., 1959.

Guilford, J. P. *Fundamental statistics in psychology and education.* (3rd ed.) New York: McGraw-Hill, 1956.

Hall, G. S. The contents of children's minds on entering school. In T. L. Smith (Ed.), *Aspects of child life and education.* Boston: Ginn & Co., 1907. Pp. 1-53.

Harlow, H. F. Thinking. In H. Helson (Ed.), *Theoretical foundations of psychology.* New York: Van Nostrand, 1951. Pp. 452-505.

Hart, Isabelle K. A classification of common errors of geography made by teachers and pupils. *The teaching of geography,* Thirty-second yearbook of the National Society for the Study of Education, Bloomington, Ill.: Public School Pub. Co., 1933. Pp. 479-482.

Hartshore, H., May, M., & Mallen, J. B. *Studies in service and self-control series.* Vol. II, Character Education Inquiry, *Studies in the nature of character.* New York: The Macmillan Co., 1929.

Hayes, S. P. Measuring the intelligence of the blind. In P. A. Zahl (Ed.), *Blindness: modern approaches to the unseen environment,* Princeton University Press, 1950, Pp. 141-173.

Hildreth, Gertrude. An individual study in word recognition. *Elementary Sch. J.*, 1935, *35* (Ap), 606-619.

Horn, E. *Methods of instruction in the social studies.* New York: Charles Scribner's Sons, 1937.

Iscoe, I., & Giller, D. Areas of concept formation in the mentally retarded. *Amer. J. ment. Defic.*, 1959, *64* (1), 117.

Lewis, W. The construct validation of a reputation test. Unpublished doctoral dissertation, George Peabody College, 1959.
Lowenfeld, B. *Our blind children.* Springfield, Ill.: Charles C Thomas, 1956.
Manwiller, C. E. Differences in emphasis on experiences and concepts in readers. *Peabody J. Educ.,* 1939, *17* (N), 171-177.
Maslow, A. H. *Motivation and personality.* New York: Harper & Bros., 1954.
Maxfield, K. E. The spoken language of the blind preschool child: a study of method. *Arch. Psychol., N. Y.,* No. 201, 1936, *29* (May).
Meltzer, H. *Children's social concepts.* Contributions to Education, No. 192. New York: Teachers College, Columbia University, 1925.
Nagy, M. The child's theories concerning death. *J. genet. Psychol.,* 1948, *73* (S), 3-27.
Nolan, C. Y. On the unreality of words to the blind. *The New Outlook for the Blind,* 1960, *54* (3), 100-102.
Oakes, M. E. *Children's explanations of natural phenomena.* Contr. Educ., No. 926. New York: Teachers College, Columbia University, 1947.
Oleron, P. Conceptual thinking of the deaf. *Amer. Ann. Deaf,* 1953, *98* (3), 304.
Piaget, J. *The child's conception of the world,* trans. by J. & A. Tomlinson. New York: Harcourt, Brace, & Co., 1929.
Reichard, Suzanne, Schneider, M., & Rapaport, D. The development of concept formation in children. *Amer. J. Orthopsychiat.,* 1944, *14* (Ja), 156-162.
Russell, D. H. *Children's thinking.* Boston: Ginn & Co., 1956.
Russell, D. H., & Dennis, W. Studies in animism, a standardized procedure for the investigation of animism. *J. genet. Psychol.,* 1939, *55* (D), 389-400.
Scott, Flora, & Meyers, C. Children's empty and erroneous concepts of the commonplace. *J. Educ. Res.,* 1923, *8* (4), 327-334.
Seeman, J. Toward a concept of personality integration. Mimeographed copy of presidential address, delivered at Tenn. Psychol. Assoc., Knoxville, Tenn., Nov., 1958.
Seeman, J., Barry, E., & Ellinwood, E. The process and outcomes of play therapy. *Counseling center discussion papers, 3* (14), University of Chicago, 1957.
Templin, M. *The development of reasoning in children with normal and defective hearing.* Minneapolis: University of Minnesota Press, 1950.
Tryon, Carolyn M. Evaluations of adolescent personality by adolescents. *Monogr. Soc. Res. Child Devel.,* 1939, *4,* No. 4 (Whole No. 23).
Tuddenham, R. S. Studies in reputation, sex and grade differences in school children's evaluation of their peers. *Psychol. Monogr.,* 1952, *66,* No. 1, (Whole No. 333).
Walker, Helen M., & Lev. J. *Statistical inferences.* New York: Henry Holt & Co., 1953.
Wallin, J. E. *Children with mental and physical handicaps.* New York: Prentice-Hall, Inc., 1949.
Wallin, J. E. *Education of mentally handicapped children.* New York: Harper, 1955.
Waters, Doris. Pre-reading experiences. *Educ.,* 1934, *54* (5), 308-312.
Welch, L., & Long, L. Comparison of the reading ability of two age groups. *J. genet. Psychol.,* 1943, *62* (Mr), 63-76.
Wechsler, D. *Wechsler intelligence scale for children.* (Manual) New York: The Psychological Corporation, 1949.
Wren, F. L. The calculation of partial and multiple coefficients of regression and Correlation. *J. Educ. Psychol.,* 1938, *29 (D),* 695-700.